

## CLAIMS

1. An optical information recording medium comprising a substrate and a light transmitting layer formed on the substrate, wherein:

transmittance of the light transmitting layer is changed upon irradiation of recording light.

2. An optical information recording medium according to claim 1, further comprising a light absorption layer between the substrate and the light transmitting layer.

3. An optical information recording medium according to claim 1 or 2, wherein the change in the transmittance of the light transmitting layer caused by irradiation of recording light is an irreversible change.

4. An optical information recording medium according to any one of claims 1 through 3, wherein the change in the transmittance of the light transmitting layer caused by irradiation of recording light is in a direction to reduce transmission of reproduction light or recording and reproduction light.

5. An optical information recording medium according to any one of claims 1 through 4, wherein the light transmitting layer is formed with a resin sheet being included therein.

6. An optical information recording medium according to claim 5, wherein the resin sheet is formed of a polycarbonate resin, an acryl resin, or a polyolefin resin.

7. An optical information recording medium according to claim 5 or 6, wherein the light

transmitting layer further includes an adhesive resin for adhering the resin sheet to the substrate.

8. An optical information recording medium according to claim 7, wherein the adhesive resin is formed with a UV curable resin included therein.

9. An optical information recording medium according to claim 7, wherein the adhesive resin is formed of an acryl gluing agent.

10. An optical information recording medium according to claim 1, wherein the light transmitting layer is formed of one or more layers of a UV curable resin.

11. An optical information recording medium according to claim 1, wherein at least one transmittance-changed area of the light transmitting layer is formed in an area other than a user data area.

12. An optical information recording medium according to claim 11 wherein the transmittance-changed area is formed on an inner side or outer side of the user data area, or both the inner and outer sides.

13. A recording and reproduction method for an optical information recording medium having a substrate and a light transmitting layer formed on the substrate, wherein:

the light transmitting layer is irradiated with modulated recording light from above and transmittance of the light transmitting layer is changed to record information, and information is reproduced based on the change in the transmittance.

14. A recording and reproduction method for an optical information recording medium

according to claim 13, wherein the transmittance of the light transmitting layer is changed irreversibly to record information.

15. A recording and reproduction method for an optical information recording medium according to claim 13 or 14, wherein at least one transmittance-changed area of the light transmitting layer is formed in an area other than a user data area.

16. A recording and reproduction apparatus for an optical information recording medium, wherein the light transmitting layer is irradiated with modulated recording light from above and transmittance of the light transmitting layer is changed to record information, and information is reproduced based on the change in the transmittance.

17. A recording and reproduction apparatus for an optical information recording medium having a substrate, a first recording area including an information recording layer, and a second recording area including a light transmitting layer, comprising:

light irradiation unit operable to irradiate the first recording area and the second recording area with recording light; and

switching unit operable to switch a recording mode of the light irradiation unit between the first recording area and the second recording area,

wherein the light transmitting layer is irradiated with modulated recording light from above and transmittance of the light transmitting layer is changed to record information in the second recording area, and information is reproduced based on the change in the transmittance.